

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK**

SIGNIFY NORTH AMERICA CORPORATION
and SIGNIFY HOLDING B.V.,

Plaintiffs,

v.

DELTA LIGHT (USA) LLC
and DELTA LIGHT N.V.,

Defendants.

Civil No. 1:19-cv-02877-DLC

ORAL ARGUMENT REQUESTED

SIGNIFY’S OPENING CLAIM CONSTRUCTION BRIEF

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Exhibit 2	U.S. Patent No. 7,262,559
Exhibit 3	U.S. Patent No. 7,352,138
Exhibit 4	U.S. Patent No. 7,178,941
Exhibit 5	U.S. Patent No. 8,070,328
Exhibit 6	Excerpts from Wiley Electrical and Electronics Engineering Dictionary (2004)
Exhibit 7	Defendants' Invalidity Contentions dated November 22, 2019
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Exhibit 9	Final Written Decision in <i>Wangs Alliance Corporation. v. Philips Lighting North America Corp</i> , IPR2015-01293, at 10 (PTAB Nov. 23, 2016)
Exhibit 10	Claim Construction Order in <i>Koninklijke Philips N.V. et al. v. Wangs Alliance Corporation, d/b/a WAC Lighting Co.</i> , Civil No. 14-12298-DJC (D. Mass.)
Exhibit 11	Excerpts from The Merriam-Webster.Com Dictionary (retrieved on February 18, 2020)

I. INTRODUCTION

Signify (formerly Philips Lighting) is the global market leader for lighting products with recognized expertise in the development, manufacturing, and application of innovative LED lighting solutions. Signify's LED lighting products have been installed and utilized throughout the world, including atop the Empire State Building. To protect its intellectual property resulting from its significant investments, Signify has obtained numerous patents directed to various LED lighting devices and techniques. Signify filed this patent infringement action alleging that Defendants have infringed claims of U.S. Patent Nos. 6,577,512, 7,178,941, 7,262,559, 7,352,138, and 8,070,328.

The '512 and '559 Patents—the “power supply patents”—relate to providing power to LED lighting devices. Unlike traditional incandescent bulbs, where a resistive filament glows when connected to a standard alternating-current (“A.C.”) 120-Volt power source, LED lighting devices emit light using LEDs, which require direct-current (“D.C.”) power and a lower voltage—generally around 2-4 Volts—to operate. The “power supply patents” disclose novel power supplies for LED lighting devices that provide the specific power, current, and voltage that the LEDs require.

The '138 Patent—the “mains dimming patent”—relates to LED lighting devices that are made compatible with conventional dimmers. Although conventional dimmers can control the intensity of incandescent lights, standard LED lighting devices “flicker” when connected to a conventional dimmer. The “mains dimming patent” discloses illumination devices and methods that make LED lighting devices compatible with conventional dimmers.

The '941 Patent—the “thermal management patent”—relates to LED lighting devices having an arrangement to shield the light sources from heat produced by the power facility that provides power to the light source. Semiconductor devices, such as LEDs, are particularly

sensitive to temperature fluctuations. Specifically, exposing LEDs to high temperatures can damage the LEDs, shortening life expectancy. This becomes particularly problematic when power supplies, disposed within the light fixture, generate excess heat during operation. The “thermal management patent” discloses an arrangement that shields the LEDs from heat produced by the power supply to avoid damaging the LEDs.

The '328 Patent—the “downlight reflector patent”—relates to the optical properties of LED downlights that may be installed, for example, in the ceiling of a residence or business. Because LEDs provide a different quality of light than incandescent bulbs, this patent describes a unique arrangement of reflectors suited to LEDs.

In accordance with the Local Patent Rules, the parties exchanged lists of proposed claim terms and phrases for construction on January 3, 2020. Defendants identified twenty-three terms and phrases for construction, and Signify identified seven. The parties exchanged proposed constructions on January 24, 2020 and thereafter met and conferred to reduce the number of terms/phrases to be construed. Since the exchange, the parties have further narrowed the number of terms/phrases. This brief addresses the thirteen terms/phrases still in dispute.

The claim construction disputes boil down to the meaning of certain words within the claims of the asserted patents. Signify proposes constructions with plain English meaning and supported by the understanding of those of ordinary skill in the art at the time of the patents' disclosures. Further, Signify's constructions for the '138 Patent have already been considered and construed by the Patent Trial and Appeal Board (“PTAB”) of the U.S. Patent and Trademark Office (“USPTO”) and the District of Massachusetts.

In contrast, Defendant's constructions seek to distort the proper scope of the claims by adding or removing limitations that are either improperly imported from the specification, in

conflict with the specification, or inconsistent with the understanding of those skilled in the art. Defendants also advance indefiniteness arguments, even though the terms would be readily understood by those of ordinary skill. Defendants' improper constructions and indefiniteness arguments should be rejected, and Signify's constructions should be adopted.

II. LEGAL PRINCIPLES

A. Claim Construction

Claim construction is a question of law, subject to the determination of underlying facts. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 838 (2015). Claim construction begins with the language of the claims themselves. Claims should be given their ordinary and customary meaning as understood by a person of ordinary skill in the art, viewing the claims in the context of the entire patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc).

In many cases, the plain and ordinary meaning of claim language is readily apparent, and claim construction will involve little more than "the application of the widely accepted meaning of commonly understood words." *Id.* at 1314. In other cases, claim terms have a specialized meaning, and it is necessary to determine what a person of ordinary skill in the art would have understood the claim language to mean by analyzing "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Id.* (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Svs., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)). While a patentee may act as his own lexicographer and give a term something other than its well-established meaning, a patentee must "clearly set forth a definition of the disputed claim term" other than its plain and ordinary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002).

The claims themselves provide substantial guidance with regard to the meaning of disputed claim language. *Phillips*, 415 F.3d at 1314. Indeed, “the context in which a term is used in the asserted claim can be highly instructive.” *Id.* In cases where the meaning of a disputed claim term in the context of the patent’s claims remains uncertain, the specification is the “single best guide to the meaning of a disputed term.” *Id.* at 1315. “The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Id.* at 1316. As a general rule, however, the particular examples discussed in the specification are not to be read into the claims as limitations. *Id.* at 1323.

The prosecution history may also explain the meaning of claim language, although “it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.* at 1317. For a statement in the prosecution history to narrow the scope of a claim, the statement must express a clear and unambiguous disavowal of a broader scope. *See Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325-26 (Fed. Cir. 2003) (“[F]or prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable.”). The prosecution history consists of the complete record of the patent examination proceedings before the USPTO, as well as the record from any PTAB proceedings. *Id.*; *see also Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1362 (Fed. Cir. 2017) (“[W]e hold that statements made by a patent owner during an IPR proceeding, whether before or after an institution decision, can be considered for claim construction and relied upon to support a finding of prosecution disclaimer.”).

If the intrinsic evidence is insufficient to establish the clear meaning of a claim, a court may resort to an examination of the extrinsic evidence. *Zodiac Pool Care, Inc. v. Hqffinger Indus., Inc.*, 206 F.3d 1408, 1414 (Fed. Cir. 2000). Extrinsic evidence may shed light on the relevant art,

and “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Phillips*, 415 F.3d at 1317. Extrinsic evidence is inherently “less reliable” than intrinsic evidence, and “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Id.* at 1318-19. “In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996).

B. Indefiniteness

Indefiniteness is a question of law, subject to a determination of underlying facts. *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1343 (Fed. Cir. 2016). Patents are presumed to be valid, and the challenger bears the burden of establishing invalidity by “clear and convincing evidence.” 35 U.S.C. § 282; *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2130 n.10 (2014) (quoting *Microsoft Corp. v. i4i Ltd.. Partnership*, 564 U.S. 91, 95 (2011)); *Akzo*, 811 F.3d at 1343).

A patent’s claims are definite if their language, “viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus*, 134 S. Ct. at 2129. “The definiteness requirement, so understood, mandates clarity, while recognizing that absolute precision is unattainable.” *Id.* “[T]he certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter.” *Id.* A court’s inquiry “must take into account the inherent limitations of language” because “[s]ome modicum of uncertainty . . . is the ‘price of ensuring the appropriate incentives for innovation.’” *Id.* at 2128 (quoting *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 732 (2002)). While patent claims must be sufficiently detailed to satisfy 35 U.S.C. § 112, “an inventor

need not explain every detail because a patent is read by those of skill in the art.” *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1367 (Fed. Cir. 2011); *see also Nautilus*, 134 S. Ct. at 2128-29 (“One must bear in mind . . . that patents are ‘not addressed to lawyers, or even to the public generally,’ but rather to those skilled in the relevant art.” (quoting *Carnegie Steel Co. v. Cambria Iron Co.*, 185 U.S. 403, 437 (1902))).

C. Means-Plus-Function

A claim element may be expressed in so-called “means-plus-function” format. If expressed in that format, the element must be construed according to 35 U.S.C. § 112(f) (formerly § 112, ¶ 6), which provides that the claim “shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof” This claim format allows the claim drafter to recite a claim feature in terms of its function (e.g., “means for [function]”) rather than its structure. The scope of a means-plus-function limitation is defined by the corresponding structure described in the specification and equivalents thereof. The Federal Circuit explains:

The first step in construing a means-plus-function limitation is to identify the function explicitly recited in the claim. The next step is to identify the corresponding structure set forth in the written description that performs the particular function set forth in the claim. Section 112 paragraph 6 does not “permit incorporation of structure from the written description beyond that necessary to perform the claimed function.” Structural features that do not actually perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations.

Asyst Techs., Inc. v. Empak, Inc., 268 F.3d 1364, 1369-70 (Fed. Cir. 2001) (citations omitted). The Federal Circuit further explained that the “corresponding structure to a function set forth in a means-plus-function limitation must actually perform the recited function, not merely enable the pertinent structure to operate as intended.” *Asyst Techs.*, 268 F.3d at 1371; *see also Acromed Corp. v. Sofamor Danek Grp., Inc.*, 253 F.3d 1371, 1382 (Fed. Cir. 2001) (stating it was impermissible to import into the claim features that are “unnecessary to perform the claimed function”).

III. THE '512 PATENT—THE FIRST OF THE “POWER SUPPLY PATENTS”

A. Technical Overview

The '512 Patent discloses a power supply for LEDs that provides power to a variable number of LEDs. Ex. 1, '512 Patent, 2:32-34. Before the '512 Patent, power supplies were not capable of driving light sources with different number of LEDs (for example, one or more in a series string) with good regulation and efficiency. *Id.* at 1:35-38. Also, previous power supplies for LED light sources were not designed to precisely regulate the LED current to prevent luminous intensity variations due to input AC voltage variations and ambient temperature. *Id.* at 1:44-49. Further, previous power supplies did not maximize energy savings. *Id.* at 1:51-53.

The novel power supply disclosed in the '512 Patent uses a current feedback mechanism to adjust power to the LEDs and provides protection against open circuits and circuit malfunctions. *Id.* at 2:34-36. A current controller compares sensed current to a reference current and generates a feedback signal, which is processed by a power factor corrector (an integrated circuit) to adjust the current flow through the transformer supplying current to the LEDs. *Id.* at 2:37-55. The power supply technology disclosed in the '512 Patent advantageously provides the ability to drive a variable number of LEDs, accommodate high power LEDs, and avoid operation of LED lamps at excessive forward current. *Id.* at 1:62-67 and 2:3-5.

B. The Asserted Claims

For purposes of claim construction in this case, the relevant claims are 19 and 38.¹ These claims use the same language except that claim 19 has “a protective circuit limiting the **current** to the LEDs” while claim 38 has “a protective circuit limiting the **voltage** to the LEDs.”

¹ Defendants stand accused of infringing claim 28 (which depends from claim 19) and claim 38 of the '512 Patent.

Claims 19 and 38 read as follows (with the language for construction in bold italics):

<p>19. A circuit for supplying power for LEDs comprising:</p> <p>a transformer, the transformer supplying current to the LEDs and being responsive to a transformer control signal;</p> <p>a current sensor for sensing current to the LEDs, the current sensor generating a sensed current signal;</p> <p><i>a current reference for generating a reference current signal;</i></p> <p>a current controller for comparing the sensed current signal to the reference current signal, the current controller generating a feedback signal;</p> <p>a <i>PFC</i> responsive to the feedback signal, the PFC generating a gate drive signal;</p> <p>a transistor responsive to the gate drive signal, the transistor generating the transformer control signal; and</p> <p><i>a protective circuit limiting the current to the LEDs.</i></p>	<p>38. A circuit for supplying power for LEDs comprising:</p> <p>a transformer, the transformer supplying current to the LEDs and being responsive to a transformer control signal;</p> <p>a current sensor for sensing current to the LEDs, the current sensor generating a sensed current signal;</p> <p><i>a current reference for generating a reference current signal;</i></p> <p>a current controller for comparing the sensed current signal to the reference current signal, the current controller generating a feedback signal;</p> <p>a <i>PFC</i> responsive to the feedback signal, the PFC generating a gate drive signal;</p> <p>a transistor responsive to the gate drive signal, the transistor generating the transformer control signal; and</p> <p><i>a protective circuit limiting the voltage to the LEDs.</i></p>
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C. “a current reference for generating a reference current signal” (claims 19 and 38)

Signify’s Proposed Construction	Defendants’ Proposed Construction
No construction needed; however, to the extent that the Court deems a construction is required: “circuitry that generates a signal that provides a reference for a current”	Indefinite. A construction is not possible.

The claim phrase “a current reference for generating a reference current signal” in claims 19 and 38 is straightforward and well-understood. For example, a “reference input” is “[a]n input,

such as that at a given voltage, which serves as a basis for comparison or operation.” Ex. 6, WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY (2004). And, “a reference signal” is “a signal that provides a reference.” *O2 Micro International Ltd. v. Samsung Electronics Co., Ltd.*, 2006 U.S. Dist. LEXIS 43904 (E.D. Tex., June 28, 2006).

In the context of the ’512 Patent, the phrase “a current reference for generating a reference current signal” simply refers to the circuitry that generates a signal that provides a reference for a current. Indeed, this interpretation is consistent with examples in the specification of the ’512 Patent that describe circuitry used to create a reference signal: “The forward converter operation of windings W1/W3 charge capacitor C3 and a **reference current signal is generated** between series resistor R4 and zener Z2.” Ex. 1, ’512 Patent, 3:15-18 (emphasis added). The current reference, generated by circuitry (*e.g.*, series resistor R4 and zener Z2), is compared by the current controller to the current flowing through the LEDs.

While Defendants *now* argue that a construction of the phrase “a current reference for generating a reference current signal” is not possible, Defendants were able to ascertain the meaning of this phrase when preparing their Invalidity Contentions (Ex. 7) in this case:

U.S. Patent 6,040,663:
(Page 3 of Defendants’
Invalidity Contentions)

a current reference for generating a reference current signal;	Fig 1 (V_{ref} , which is connected to amplifier A, will have some current associated with it that corresponds to a reference current signal); col 3, ln 47-51
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U.S. Patent 6,091,614:
(Page 5 of Defendants’
Invalidity Contentions)

a current reference for generating a reference current signal;	Fig 1 (51, 67, V_{ref}); col 5, ln 47-50; col 6, ln 4-10
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U.S. Patent 6,285,139:
(Page 6 of Defendants’
Invalidity Contentions)

a current reference for generating a reference current signal;	Fig 1 (47, I_{ref}); col 6, ln 34-36
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As Defendants were able to identify “a current reference for generating a reference signal” in three alleged prior art references, it is disingenuous for Defendants to argue that a construction of this phrase is not possible. The claim phrase “a current reference for generating a reference current signal” is straightforward and well-understood (even by Defendants). To the extent that the Court deems a construction is required, the phrase “a current reference for generating a reference signal” should be construed to mean “circuitry that generates a signal that provides a reference for a current” as described in the ’512 Patent. Ex. 1, ’512 Patent, 3:13-27.

D. “PFC” (claims 19 and 38)

Signify’s Proposed Construction	Defendants’ Proposed Construction
“Power factor corrector integrated circuit” or alternatively, “Power factor corrector, which is an integrated circuit”	No construction necessary. Alternatively, plain and ordinary meaning, namely, “Power Factor Corrector.”

The parties agree that the term “PFC” refers to a “power factor corrector.” Defendants’ construction, however, ignores that a power factor corrector is an integrated circuit. Indeed, the specification of the ’512 Patent defines the term “PFC” as a “power factor corrector integrated circuit” and thus directly supports Signify’s proposed construction: “The flyback transformer is controlled by **PFC 128, which is a power factor corrector integrated circuit**, such as model L6561 manufactured by ST Microelectronics, Inc.” Ex. 1, ’512 Patent, 3:7-10 (emphasis added).

As explained by the Federal Circuit, the specification is the “single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1315. “The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Id.* at 1316. Here, the construction for the term “PFC” that most naturally aligns with the ’512 specification is “power factor corrector integrated circuit,” or alternatively, “power factor corrector, which is an integrated circuit.”

E. “a protective circuit limiting the current to the LEDs” (claim 19) and “a protective circuit limiting the voltage to the LEDs” (claim 38)

Claim Phrase	Signify’s Proposed Construction	Defendants’ Proposed Construction
“a protective circuit limiting the current to the LEDs” (claim 19)	No construction needed; however, to the extent that the Court deems a construction is required: “circuitry that keeps undesirably large current from being supplied to the LEDs”	“A circuit operable to reduce or remove power from the LEDs by reducing or removing current to the LEDs.”
“a protective circuit limiting the voltage to the LEDs” (claim 38)	No construction needed; however, to the extent that the Court deems a construction is required: “circuitry that keeps undesirably large voltage from being supplied to the LEDs”	“A circuit operable to reduce or remove power from the LEDs by reducing or removing current to the LEDs.

As previously noted, claims 19 and 38 use the same language except that claim 19 has “a protective circuit limiting the **current** to the LEDs” and claim 38 has “a protective circuit limiting the **voltage** to the LEDs.” Accordingly, these phrases must be construed to have different scope.

Defendants, however, contend that the phrase “a protective circuit limiting the **current** to the LEDs” in claim 19 and the phrase “a protective circuit limiting the **voltage** to the LEDs” in claim 38 mean exactly the same thing and should both be construed to mean: “A circuit operable to reduce or remove power from the LEDs by reducing or removing **current** to the LEDs.” This is erroneous and contrary to the principles of claim construction law.

According to Federal Circuit law, “There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim

differentiation states the presumption that the difference between claims is significant.” *Tandon Corp. v. US Int’l Trade Comm’n*, 831 F.2d 1017, 1023 (Fed. Cir. 1987). Indeed, when construing claim language, different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope. *Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971-72 (Fed. Cir. 1999) (stating that the doctrine of claim differentiation stems from “the common sense notation that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope.”). *See also Comark Communications v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (stating the presumption that each claim in a patent must have a different scope).

Under Defendants’ proposed construction, claims 19 and 38 would have the same scope. Also, Defendants’ proposed construction of the phrase “a protective circuit limiting the **voltage** to the LEDs” in claim 38 to mean “a circuit operable to reduce or remove power from the LEDs by reducing or removing **current** to the LEDs” would improperly change the word “voltage” to “current” in the claim. However, claim construction “is simply a way of elaborating the normally terse claim language in order to understand and explain, *but not to change*, the scope of the claims.” *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1339 (Fed. Cir. 2001) (emphasis added).

To the extent the Court deems that these phrases need construction,² the phrase “a protective circuit limiting the **current** to the LEDs” in claim 19 should be construed mean “circuitry that keeps undesirably large **current** from being supplied to the LEDs.” And the phrase “a protective circuit limiting the **voltage** to the LEDs” in claim 38 should be construed to mean “circuitry that keeps undesirably large **voltage** from being supplied to the LEDs.”

² A “protective device” (or circuit) is defined as “Any device for keeping an undesirably large current, voltage, or power out of a given part of an electrical circuit.” Ex. 8, MODERN DICTIONARY OF ELECTRONICS (7th ed. 1999).

IV. THE '559 PATENT—THE SECOND OF THE “POWER SUPPLY PATENTS”

A. Technical Overview

The '559 Patent discloses a power supply that prevents damage to an LED light source during an initial loading stage. Ex. 2, '559 Patent, 1:44-47. When an LED light source receives power, excessive current may flow, harming the LED. *Id.* at 1:27-34. Previous power supplies have not necessarily been designed to prevent this excessive current. *Id.* The '559 Patent teaches a power supply that clamps a peak of the LED current during the initial loading stage to protect the LED and help ensure it operates normally. *Id.* at 1:44-48. The power supply may also include a short/open detection circuit to detect an outage of the LED light source and determine if the LED is operating normally. *Id.* at 5:44-59.

Figure 1 (shown below) illustrates an exemplary LED power supply with current clamping and a short/open detection circuit in the '559 Patent. *Id.* at 2:18-65.

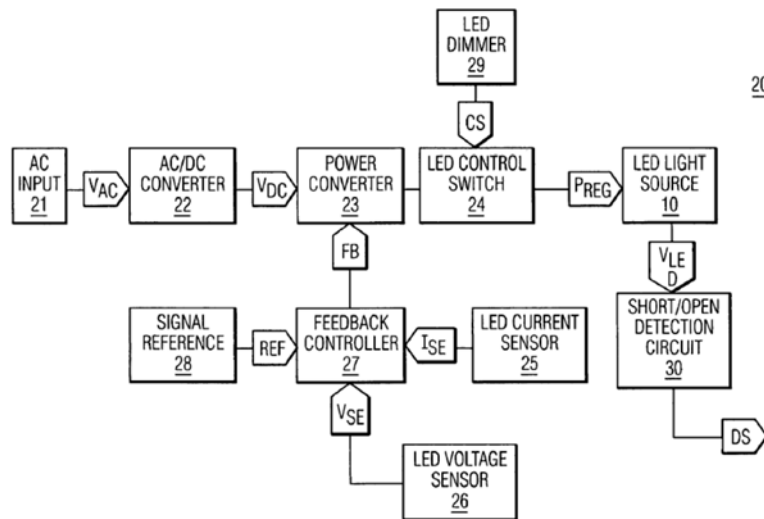


FIG. 1

LED control switch 24 clamps the peak of the current to LED light source 10 during its initial loading stage. *Id.* at 2:43-50. Short-circuit/open-circuit detection circuit 30 detects whether the LED is operating normally or has a short or open condition. *Id.* at 2:56-59.

B. The Asserted Claims

Defendants stand accused of infringing claims 6, 10, and 11 of the '559 Patent, which are set forth below (with language for construction in bold italics):

<p>6. A power supply for an LED light source, said power supply comprising:</p> <p><i>a power converter operable to provide a regulated power including a LED current and a LED voltage;</i></p> <p>an LED control switch operable to control a flow of the LED current through the LED light source; and</p> <p>a detection circuit operable to provide a detection signal indicative of an operating condition of the LED light source associated with the LED voltage,</p> <p><i>wherein said LED control switch is further operable to clamp a peak of the LED current during an initial loading stage of the LED light source,</i></p> <p>wherein the detection signal has a first level representative of a load condition of the LED light source, and</p> <p>wherein the detection signal has a second level representative of either a short condition or an open condition of the LED light source.</p>	<p>10. A power supply for an LED light source, said power supply comprising:</p> <p><i>a power converter operable to provide a regulated power including a LED current and a LED voltage;</i></p> <p>an LED control switch operable to control a flow of the LED current through the LED light source; and</p> <p>a current sensor operable to sense the LED current flowing through the LED light source, said current sensor including</p> <p>an differential amplifier, and</p> <p><i>means for adjusting a gain of said differential amplifier,</i></p> <p><i>wherein said LED control switch is further operable to clamp a peak of the LED current during an initial loading stage of the LED light source.</i></p>	<p>11. A power supply for an LED light source, said power supply comprising:</p> <p><i>a power converter operable to provide a regulated power including a LED current and a LED voltage;</i></p> <p>an LED control switch operable to control a flow of the LED current through the LED light source; and</p> <p>a voltage sensor operable to sense the LED voltage applied to the LED light source, said voltage sensor including</p> <p>an differential amplifier, and</p> <p><i>means for adjusting a gain of said differential amplifier,</i></p> <p><i>wherein said LED control switch is further operable to clamp a peak of the LED current during an initial loading stage of the LED light source.</i></p>
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C. “a power converter operable to provide a regulated power including a LED current and a LED voltage” (claims 6, 10, and 11)

Signify’s Proposed Construction	Defendants’ Proposed Construction
“circuitry that converts received power into power that is maintained to be within specified values and that includes a current and voltage designed to operate the LED light source”	“A device or circuit for converting electrical energy into a form that is capable of providing power to an LED light source.”

The primary difference between the parties’ constructions for “a power converter operable to provide a regulated power including a LED current and a LED voltage” in claims 6, 10, and 11 is that Defendants’ proposed construction does not give meaning to “regulated power” in the claim. Indeed, Defendant’s construction fails to ascribe any meaning to “regulated” and only interprets “power including an LED current and an LED voltage.”

In electronics, “regulation” refers to “[t]he process of maintaining a voltage, current, amplitude, power level, or the like, within specified values.” Ex. 8, WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY (2004). Signify contends that a proper construction of the phrase “a power converter operable to provide a regulated power including a LED current and a LED voltage” is “circuitry that converts received power into power that is maintained to be within specified values and that includes a current and voltage designed to operate the LED light source.” This construction gives meaning to “regulated power” and is consistent with the plain and ordinary meaning of the claim term. It is also consistent with the specification of the ’559 Patent, which describes a power converter that generates an output with a specified power value: “a power converter generates a regulated power P_{REG} including a LED current and a LED voltage V_{LED} .” Ex. 2, ’559 Patent, 2:26-27. The specification provides additional support for this construction in the example of a flyback converter that “transfers power to LED light source 110 where the LED

current and the LED voltage are controlled by feedback control.” Ex. 2, ’559 Patent, 3:17-26. Feedback control means that the output of the flyback is monitored to retain the LED current and LED voltage within certain limits.

D. “[wherein said LED control switch is further operable] to clamp a peak of the LED current” (claims 6, 10, and 11)

Signify’s Proposed Construction	Defendants’ Proposed Construction
No construction needed; however, to the extent that the Court deems a construction is required: “The LED control switch operates to limit a peak of the LED current”	“Wherein said LED control switch is further operable to limit the maximum LED current.”

Signify contends that the claim phrase “wherein said LED control switch is further operable to clamp a peak of the LED current” in claims 6, 10, and 11 does not need construction as the phrase is straightforward and well-understood. Indeed, the parties agree that the word “clamp” in the phrase means “limit.” But Defendants try to distort the language of the claim by interpreting “a peak of the LED current” to mean “**the** maximum LED current.”

Defendants’ construction purports to rely on a statement made during prosecution before the European Patent Office, in which the Applicants’ European counsel stated that “the LED current is clamped (*i.e.*, limited to a maximum current) rather than switched off.” However, the results of foreign patent proceedings are not relevant to claims of patent infringement under U.S. law. *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1458 n.2 (Fed. Cir. 1984) (finding it “meaningless” as to the issue of invalidity in the United States the fact that foreign counsel in a foreign counterpart allegedly conceded that prior art anticipated the foreign counterpart’s claims). Indeed, the Court of Appeals for the Federal Circuit has for decades observed that “[w]e take notice of the fact that the theories and laws of patentability vary from country to country, as do examination practices.” *Heidelberger Druckmaschinen AG v. Hantscho*

Commercial Prods., Inc., 21 F.3d 1068, 1073 n. 2 (Fed. Cir. 1994); *Lindemann Maschinenfabrik*, 730 F.2d at 1458 n.2 (Fed. Cir. 1984) (“the language and laws of other countries differ substantially from those in the United States”).

Moreover, Defendants’ reliance on the statement made by Applicant’s European counsel is misplaced because the word “peak” was not used in the statement. Further, Defendants improperly try to change “a peak current” to “**the** maximum current” without justification. Defendants’ proposed construction should be rejected. To the extent the Court deems a construction required, the phrase “to clamp a peak of the LED current” should be construed to mean “to limit a peak of the LED current.”

E. “means for adjusting a gain of said differential amplifier” (claims 10 and 11)

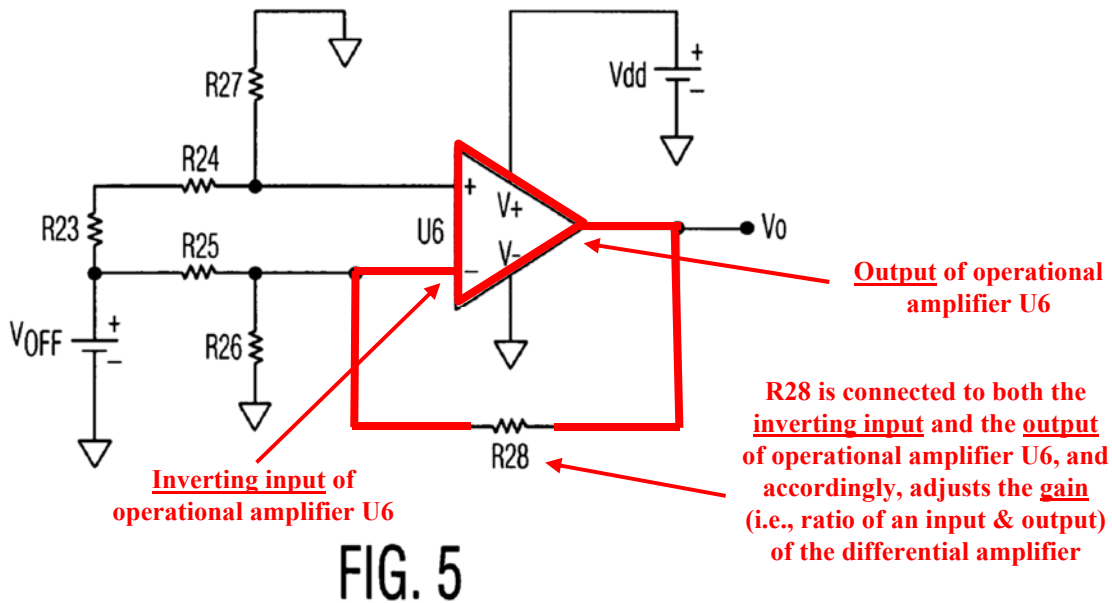
Signify’s Proposed Construction	Defendants’ Proposed Construction
Means-plus-function under 35 U.S.C. 112(f). The function is adjusting a gain of a differential amplifier. The corresponding structure is a resistor (<i>e.g.</i> , R28, R25, or R26) and equivalents thereof.	Invalid under 35 U.S.C. §112. The claim language is written in means-plus-function format, but the specification does not describe any structure that is capable of performing the stated function of “adjusting a gain” of the differential amplifier.

The parties agree that “means for adjusting a gain of said differential amplifier” in claims 10 and 11 is a means-plus-function limitation. Signify contends that the corresponding structure for “adjusting a gain of the differential amplifier” is a resistor, while Defendants contend that there is no corresponding structure disclosed in the ’559 Patent.

Contrary to Defendants’ position, the ’559 Patent describes and shows a resistor (*e.g.*, R28 in Figure 5) that can perform the function of “adjusting a gain of a differential amplifier.” For example, the specification of the ’559 Patent states that “resistor R28 [is] connected to an inverting input of an operational amplifier U6” and “is further connected to an output of operational

amplifier U6.” Ex. 2, ’559 Patent, 7:1-2 and 7:5-6. “Gain” simply refers to the ratio of a measurement of an output of a circuit or component to its input. In the case of operational amplifier U6 in Figure 5, the gain is the ratio of an output of U6 to an input of U6.

Figure 5 of the ’559 Patent is shown annotated in red below:



As shown above, resistor R28 adjusts the gain (the ratio of the input and the output) of the differential amplifier, which includes operational amplifier U6, by being connected to both the inverting input and the output of the operational amplifier U6. Resistors R25 and R26 are additional resistors that may be used in conjunction with resistor R28 to adjust the gain (e.g., “resistors R25 and R26 are chosen to apply half of the offset voltage VOFF to the inverting input of operational amplifier U6. . . . As a result, the gain of operational amplifier U6 can be adjusted”). Ex. 2, 7:9-16. However, as resistors R25 and R26 are examples of additional resistors that can be used to adjust the gain of the differential amplifier, all of these resistors are not necessary to perform the recited function of “adjusting a gain of said differential amplifier.” Indeed, a means-plus-function construction “does not permit incorporation of structure from the written description beyond that necessary to perform the claimed function.” *Asyst Techs.*, 268 F.3d at 1369-70.

Accordingly, “means for adjusting a gain of said differential amplifier” should be construed to be a resistor (*e.g.*, R28, R25, or R26) and equivalents under Section 112(f).

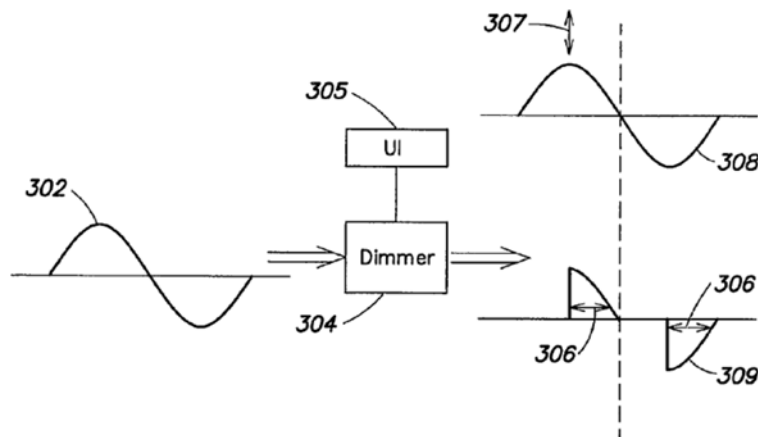
V. THE ’138 PATENT—THE “MAINS DIMMING PATENT”

A. Technical Overview

The ’138 Patent is directed to LED-based illumination devices that can be used with existing A.C. dimming circuits. Ex. 3, ’138 Patent, 2:58-3:1. Lighting systems for illumination are generally powered by an A.C. power source, such as the standardized supply found in most homes and buildings, commonly referred to as a “line voltage”—*e.g.*, 120 Volts (“V”) at 60 Hertz (“Hz”) in the United States, and 220 V at 50 Hz in other countries. *Id.* at 1:58-61. A.C. dimming circuits (*e.g.*, a slider dimmer mounted on the room’s wall adjacent the light switch) receive this A.C. line voltage from the electrical grid and, in response to user operation of an interface such as a dimmer switch, provides an A.C. signal output having a variable parameter (*e.g.*, amplitude or phase angle) that adjusts the average voltage of the output signal supplied to the lighting system. *Id.* at 1:61-67. Incandescent lights, which provide illumination via heating a filament (*e.g.*, a resistor), are inherently compatible with these varying A.C. signals because the change in average voltage directly adjusts how hot the filament gets and, hence, the intensity of the light (which is proportional to the filament’s temperature), making it brighter or darker. *Id.* at 2:38-54. In contrast to incandescence, LED lights emit light by electroluminescence—a fundamentally different physical phenomenon based on a flow of *direct* current (D.C.) through the device; thus, LEDs require special circuitry to be compatible with the varying A.C. signals to adjust their light output. *Id.* at 9:10-22.

Traditional A.C. dimming circuits provide varying A.C. signals via operation of a user interface—such as turning a knob or moving a slider, often mounted on a wall in proximity to the

light source (*id.* at 1:41-53)—in one of two ways. *Id.* at 2:5-24. In one approach, the adjustment of the user interface causes the A.C. dimming circuit to increase or decrease the voltage amplitude of the A.C. signal output, causing the A.C. dimming circuit to provide A.C. signals of varying amplitude to the light source. *Id.* at 2:7-10. In the more common approach, adjustment of the user interface causes the A.C. dimming circuit to vary the “duty cycle” (the ratio of the pulse duration to the pulse period) of the output A.C. signal, causing the A.C. dimming circuit to provide A.C. signals of varying duty cycle to the light source. *Id.* at 2:10-16. The varying A.C. signals from these two approaches are illustrated in Figure 1 of the ’138 Patent, reproduced below.



Id. at Fig. 1. Figure 1 shows conventional A.C. dimming circuit 304. *Id.* at 2:17-23, Fig. 1. An A.C. power source provides a standard A.C. line voltage—*i.e.*, a non-varying, sinusoidal waveform 302 of line-voltage amplitude (e.g., 120 Volts at 60 Hz)—to A.C. dimmer 304, and in response to operation of user interface 305, A.C. dimmer 304 outputs an A.C. signal—either waveform 308, which has an adjusted amplitude 307, or waveform 309, which has an adjusted duty cycle 306, defined in each half-cycle (*i.e.*, in both the positive and negative parts of the A.C. signal). *Id.* at 2:18-29. The variations of amplitude 307 and duty cycle 306, resulting from the adjustment of user interface 305, are illustrated by the lines with arrows at both ends in Figure 1.

See *id.* at Fig. 1, 2:18-29. By this operation, the A.C. dimming circuit converts a standard, non-varying A.C. waveform into a non-standard, A.C. waveform.

The '138 Patent discloses illumination devices and methods that make LED lights compatible with these non-standard, varying A.C. signals from A.C. dimmer circuits. *Id.* at 2:58-64. Figure 6 of the '138 Patent, shown below, illustrates an exemplary circuit that is compatible with an A.C. dimmer circuit that provides A.C. signals having an adjusted duty cycle.

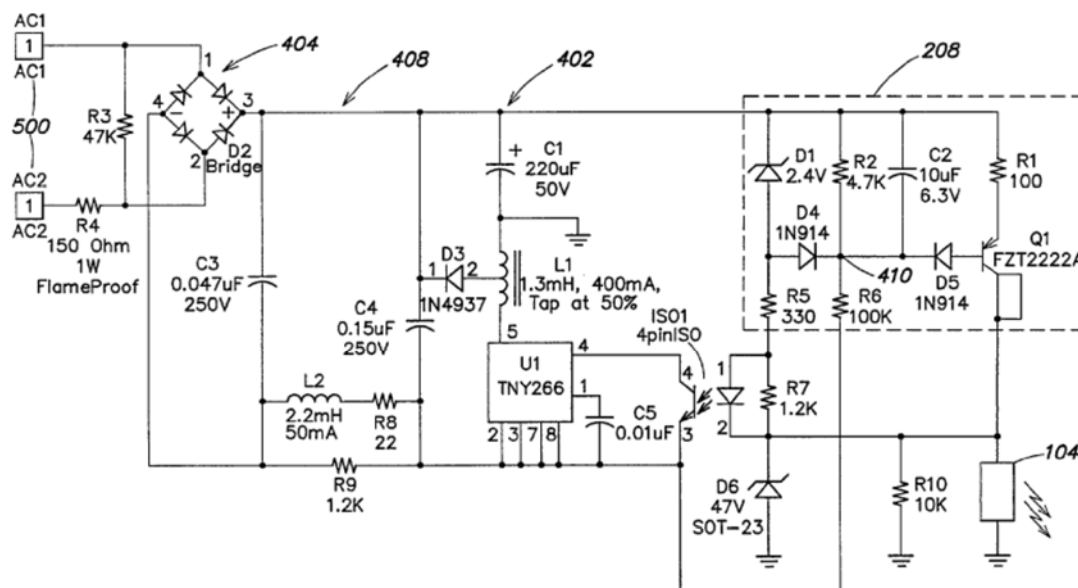


FIG. 6

B. The Asserted Claims

Defendants stand accused of infringing independent claim 1 and dependent claim 2 and 9-

11. Claim 1 is set forth below (with language for construction in bold italics):

1. An illumination apparatus, comprising:

at least one LED; and

at least one controller coupled to the at least one LED and configured to receive **a power-related signal** from an alternating current (A.C.) power source that provides **signals other than a standard A.C. line voltage**, the at least one controller further configured to provide power to the at least one LED based on the power-related signal.

The above-highlighted disputed terms have been considered by the Patent Trial and Appeal Board (“PTAB”) of the U.S. Patent and Trademark Office (“USPTO”) in an *Inter Partes* Proceeding (“IPR”) involving the ’138 Patent. In addition, the term “signals other than a standard A.C. line voltage” has been considered Judge Casper of the District of Massachusetts and she reached the same interpretation for this term as the PTAB.

C. “signals other than a standard A.C. line voltage” (claim 1)

Signify’s Proposed Construction	Defendants’ Proposed Construction
“two or more non-standard A.C. signals”	This term is indefinite because it only states what the signals aren’t, not what they are. The patent does not provide written description support for any and all “signals.” Alternatively, to the best of Defendants’ ability to understand this language, it should be construed to mean: “voltage signals other than 120 Volts RMS at 60 Hz and 220 Volts RMS at 50 Hz.”

Independent claim 1 recites “an alternating current (A.C.) power source that provides signals other than a standard A.C. line voltage.” Signify’s proposed construction for the portion of this phrase at issue—“signals other than a standard A.C. line voltage”—gives meaning to “alternating current (A.C.)” and “signals” (plural) by requiring “*two or more alternating current (A.C.) signals*” (emphases added). In the IPR decision involving the ’138 Patent, the PTAB agreed with this interpretation. *See* Ex. 9 at 8-14. This phrase was also considered by Judge Casper of the District of Massachusetts, in which the court held that “[n]o construction is necessary for the term ‘signals other than a standard A.C. line voltage.’” Ex. 10 at 29.

1. An A.C. power source provides A.C. signals.

As the PTAB agreed, the proper interpretation of “alternating current (A.C.) power source that provides signals” requires a power source that provides “*A.C. signal[s]*.” Ex. 9 at 12

(emphasis in original); *see also id.* at 14 (“[W]e determine that the term ‘A.C. dimmer circuit’ means ‘a circuit that provides an alternating current (A.C.) dimming signal.’ Similarly, we clarify our claim construction and determine that the ‘alternating current (A.C.) power source that provides signals...’ requires an A.C. signal...”).

As a matter of basic electronics, A.C. power sources are different from D.C. power sources. *See, e.g.,* Ex. 3 at 9:16-35, 22:64-23:4 (distinguishing “types of power sources (*e.g.*, A.C. line voltages, A.C. dimmer circuits, D.C. power sources)”). Specifically, “A.C.”—short for “alternating current”—is a standard term of art meaning electric current that reverses direction at regular intervals, which is caused by a voltage that alternates in polarity (positive and negative). *See, e.g.,* Ex. 8, MODERN DICTIONARY OF ELECTRONICS (7th ed. 1999) (“alternating current - Abbreviated ac. 1. A flow of electricity that reaches maximum in one direction, decreases to zero, then reverses itself and reaches maximum in the opposite direction. The cycle is repeated continuously. The number of such cycles per second is the frequency. The average value of voltage during any cycle is zero. 2. Any signal that varies with time. It usually means that the current actually changes polarity with time. The plot of current versus time usually is a sine wave that comprises a succession of instantaneous values, the greatest of which is the amplitude or peak value. The time taken by one complete cyclic repetition is the period, and the number of periods in one second is the frequency.”).

In contrast, “D.C.”—short for “direct current”—is a standard term of art meaning that the current flows in only one direction, which is caused by a voltage that does not alternate in polarity. *See* Ex. 8, MODERN DICTIONARY OF ELECTRONICS (7th ed. 1999) (“direct current - Abbreviated dc. 1. An essentially constant-value current that flows in only one direction. 2. A flow of continuous electric current in one direction as long as the circuit is closed (as opposed to

alternating current). 3. A current that flows in only one direction in an electric circuit. It may be continuous or discontinuous, and may be constant or varying.”).

2. A “standard A.C. line voltage” means a sinusoidal wave at a standard frequency and amplitude.

The term “standard A.C. line voltage” is a known term of art that means a sinusoidal wave at a standard frequency and amplitude. The specification identifies the waveform in Figure 1 (i.e., waveform 302) as a standard A.C. line voltage. Ex. 3 at Fig. 1, 2:26-29 (“FIG. 1 shows an example of an A.C. voltage waveform 302 (e.g., representing a standard line voltage)”); *see also* Ex. 8, MODERN DICTIONARY OF ELECTRONICS (7th ed. 1999) (defining “line voltage”). The specification further provides two examples of a standard line voltage at a standard frequency and amplitude, i.e., “120 Volts RMS at 60 Hz” (common in the United States) and “220 Volts RMS at 50 Hz” (common in other countries). Ex. 3 at 1:58-61. None of the “signals *other than a standard A.C. line voltage*” described in the ’138 Patent—e.g., varying waveforms 308 and 309—is both a sinusoidal wave and at a standard amplitude. *See id.* at 2:25-37 (describing waveform 308 as having a varying amplitude 307 and waveform 309 as having a varying duty cycle 306), Fig. 1. As shown in Figure 1, varying waveform 308 has amplitudes other than the amplitude of the standard line voltage, and varying waveform 309 is not a sinusoidal waveform because it has clipped half-cycles. *See id.* at Fig. 1, 2:5-55.

3. Defendants’ arguments should be rejected.

Defendants seem to make two separate arguments regarding the claim term “signals other than a standard A.C. line voltage.” First, Defendants argue that the term is indefinite because it “only states what the signals aren’t, not what they are.” Defendants seems to suggest that negative claim limitations are per se indefinite. The Federal Circuit has held, and the Southern District acknowledged, that “there is no per se ban on the use of negative limitations.” *Sienna v. CVS Corp.*,

2007 U.S. Dist. LEXIS 2, *23-24 (S.D.N.Y. Jan. 3, 2007) (holding as not indefinite the limitation “non-standard bulb socket” and “non-standard twinkle bulb”); *see also*, *Animal Legal Defense Fund v. Quigg*, 932 F.2d 920, 923 (Fed. Cir. 1991) (“The use of a negative limitation to define the metes and bounds of the claimed subject matter is a permissible form of expression.”).

Second, Defendants argue that “signals other than a standard A.C. line voltage,” being a negative limitation, requires a description of “any and all ‘signals’” for the terms to have written description support. There is no such standard to meet the written description requirement. “Negative claim limitations are adequately supported when the specification describes a reason to exclude the relevant limitation.” *Santarus, Inc. v. Par Pharm, Inc.*, 694 F.3d 1344, 1351 (Fed. Cir. 2012). The specification of the ’138 Patent throughout provides support for non-standard signals. Ex. 3, 2:60-67, 3:1-11, 9:26-31 (examples of a standard A.C. line voltage), 9:40-55 (examples of non-standard A.C. signals), and 10:49-67. Indeed, the entire patent revolves around the idea of a controller that can provide power to the LEDs when receiving a non-standard A.C. signal.

Finally, Defendants suggest that the limitation should be understood as 120 Volts RMS at 60 Hz and 220 Volts RMS at 50 Hz. The PTAB considered this issue and concluded that the examples provided in the specification of 120 Volts RMS at 60 Hz and 220 Volts RMS at 50 Hz were merely examples of kinds of standard A.C. signals and that the definition of A.C. signals could encompass other examples, e.g., non-sinusoidal examples. Also, in proposing this narrow limitation, Defendants commit “one of the cardinal sins of patent law – reading a limitation from the written description into the claims.” *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001). The Federal Circuit has “repeatedly warned against confining the claims to those embodiments” described in the specification. *Phillips*, 415 F.3d at 1323. In particular, it has “expressly rejected the contention that if a patent describes only a single

embodiment, the claims of the patent must be construed as being limited to that embodiment.” *Id.* Although the ’138 Patent describes examples of 120 Volts RMS at 60 Hz and 220 Volts RMS at 50 Hz, the claims are not limited to the preferred embodiments and illustrative examples described in the specification. “Where a specification does not require a limitation, that limitation should not be read from the specification into the claims.” *Intel Corp. v. US. Int’l Trade Comm’n*, 946 F.2d 821, 836 (Fed. Cir. 1991) (emphasis in original). Moreover, “references to a preferred embodiment, such as those often present in a specification, are not claim limitations.” *Laitram Corp. v. Cambridge Wire Cloth Co.*, 863 F.2d 855, 865 (Fed. Cir. 1988).

D. “a power-related signal” (claim 1)

Signify’s Proposed Construction	Defendants’ Proposed Construction
“a signal from the A.C. power source that provides signals other than a standard A.C. line voltage”	Indefinite. This is not a term of art, and is never defined in the patent. If the word “related” is to have any meaning, then a “power signal” and a “power-related signal” must be different. However, the patent only discloses supplying power to the controller. Alternatively, to the best of Defendants’ ability to understand this language, it should be construed to mean: a voltage signal.

As used in the claims and the specification, the term “power-related signal” is simply a signal from the A.C. power source that provides signals other than a standard A.C. line voltage. Indeed, this was the way the PTAB described the power-related signal: “This power-related signal is from the ‘(A.C.) power source that provides signals other than a standard A.C. line voltage.’” Ex. 9, Final Written Decision, IPR2015-01293, at 10 (PTAB Nov. 23, 2016).

This interpretation is consistent with the use of the term in the specification and claims of the ’138 Patent. Indeed, claims 2-4, 9-10, and 26 define the A.C. power source to be an A.C. dimmer circuit and the power-related signal to be the output of the A.C. dimmer circuit—thus, in

these claims, the “power-related signal” is the signal received from the A.C. dimmer circuit. Also, in claims 3 and 9, a user-interface of the A.C. dimmer circuit varies the power-related signal.

It follows that if the “power-related signal” is varied by operation of the A.C. dimmer user interface, then the “power-related signal” is the output signal received from the A.C. dimmer circuit. This is confirmed by dependent claims 4, 10, and 26, which require that operation of the user interface varies a duty cycle of the power-related signal—one of the ways described above that the output signal of A.C. dimmer circuit is varied through adjustment of the user interface. Thus, the “power-related signal” is—as shown in the example of the A.C. dimmer—“a signal received from the A.C. power source that provides signals other than a standard A.C. line voltage.”

Defendants note that for the term “power signal” to have meaning, then “power-related signal” must be different. This is correct. “Power signal” in the specification is used to specifically describe a signal that has a communication channel carrying control information in a portion of the duty-cycle of the signal. *See, e.g.*, Ex. 3, ’138 Patent 3:63-67, 4:1-18, 21:35-67, 22:1-52. The term “power-related signal” is used to distinguish the term “power signal” from the signal received from the A.C. power source that provides signals other than a standard A.C. line voltage.

In the alternative, Defendant suggests that the term “power-related signal” should be construed to mean “voltage signal.” This proposed definition, however, suffers from being too broad by not giving the language of the claim its due weight. The power-related signal is not just any voltage signal, but a signal of the type provided by the A.C. power source that provides signals other than a standard A.C. line voltage. Stated differently, “voltage signal” is broad enough to include standard A.C. line voltages, which should be excluded by the language of the claim.

The term “power-related signal” should be construed to mean “a signal from the A.C. power source that provides signals other than a standard A.C. line voltage.”

VI. THE '941 PATENT—THE “THERMAL MANAGEMENT PATENT”

A. Technical Overview

The '941 Patent is a lengthy patent disclosing methods and systems for lighting systems, including high output linear lighting systems for various environments. Ex. 4, '941 Patent, abstract.

With respect to the claimed subject matter in this case (asserted claims 1 and 10), FIG. 56 (annotated in red) depicts the interior of a linear housing for an exemplary lighting system:

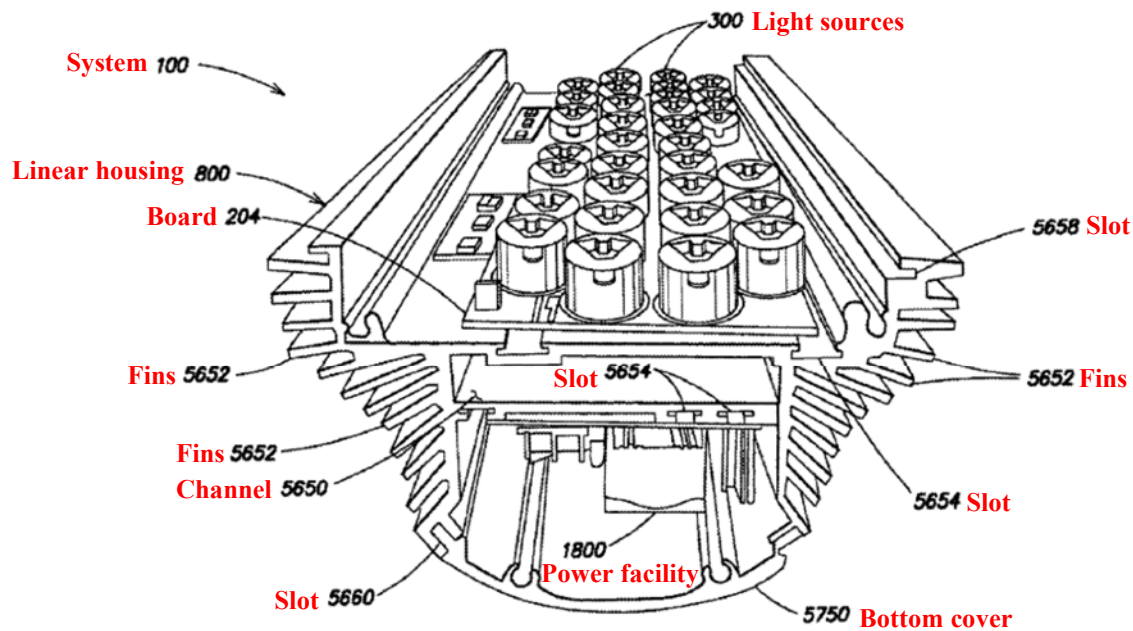


FIG. 56

As shown above, a board 204 disposed in the interior of a linear housing 800 for a lighting system 100. The system 100 may be used, for example, as a large fixture for architectural lighting, theatrical lighting, retail lighting, visual merchandising and other applications where a large amount of light output is desired from the lighting system. The housing 800 may have a channel 5650 that provides an internal space, such as containing air, between the board 204 that supports the light sources 300 and the power facility 1800. Separated main extrusions prevent heat conduction between power facility 1800 and the board 204 (which may be a printed circuit board)

and the light sources 300 that reside on the board 204. The channel 5650 serves as a ventilator and as an insulating channel between the two heat sources, namely, the light sources 300 and the power facility 1800. In addition, the channel 5650 assists in forcing heat out to a plurality of fins 5652. By shielding the light sources 300 from heat produced by the power facility 1800 and channeling heat produced by the light sources 300 away from the light sources 300, the system 100 allows heat-sensitive light sources 300 such as semiconductor-based light sources 300 to survive longer, particularly in environments where ambient temperatures are high and in applications that require high light output, such as theatrical applications.

B. The Asserted Claims

Defendants stand accused of infringing claims 1 and 10 of the '941 Patent. Claim 1 is directed to a lighting method and claim 10 is directed to a lighting system. Claims 1 and 10 are set forth below (with language for construction in bold italics):

<p>1. A lighting method, comprising:</p> <p>providing a substantially linear housing having a first cavity extending longitudinally therein, the first cavity holding a circuit board, the circuit board supporting a plurality of LED light sources;</p> <p>providing <i>a power facility for providing power to the light sources</i>; and</p> <p>providing a <i>channel extending longitudinally within the housing and spaced apart from the first cavity</i> between the circuit board and the power facility for shielding the light sources from heat produced by the power facility.</p>	<p>10. A lighting system, comprising:</p> <p>a substantially linear housing having a first cavity extending longitudinally within the linear housing;</p> <p>a circuit board positioned within the first cavity;</p> <p>a plurality of LED light sources, the light sources supported within the first cavity by the circuit board;</p> <p><i>a power facility for providing power to the light sources</i>; and</p> <p>a first <i>channel extending longitudinally within the housing and spaced apart from the first cavity</i> between the circuit board and the power facility for shielding the light sources from heat produced by the power facility.</p>
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C. “a power facility for providing power to the light sources” (claims 1 and 10)

Signify’s Proposed Construction	Defendants’ Proposed Construction
“circuitry to provide power to the light sources in a form suitable for operation of the light sources.”	Plain and ordinary meaning, namely, “a source for providing energy to a light, including AC power sources, DC power sources, batteries, solar based power sources, thermoelectric or mechanical-based power sources.”

The proper construction for the phrase “a power facility for providing power to the light sources” is “circuitry to provide power to the light sources in a form suitable for operation of the light sources.” Signify’s proposed construction gives meaning to this entire phrase. Defendants’ proposed construction should be rejected because it only provides meaning for the term “a power facility” but ignores the remaining language “for providing power to the light sources.”

With respect to the term “power facilities,” the ’941 Patent explains:

In various aspects, examples of power facilities 1800 include, but are not limited to, AC power sources, DC power sources, batteries, solar-based power sources, thermoelectric or mechanical-based power sources and the like. Additionally, in one aspect, the power facility 1800 may include or be associated with one or more power conversion devices that convert power received by an external power source to a form suitable for operation of the lighting unit 102. Light sources 300 have varying power requirements. Accordingly, lighting units 102 may be provided with dedicated power supplies that take power from power lines and convert it to power suitable for running a light unit 102.

Ex. 4, ’941 Patent, 20:31-39.

It is important to recognize that the phrase to be construed here is “a power facility for providing power to the light sources” not just the term “a power facility.” To that end, the above passage appreciates the need to provide power to the light sources in a form suitable for operation. While the passage lists several examples of “power facilities” (*e.g.*, AC power sources, DC power sources, batteries, solar-based power sources, etc.), it also states, in the next sentence, that the power facility can include power conversion devices to convert the received power to a form

suitable for operation of the LEDs. The specification thus explains that the power supplied by the power facility should be in a form suitable for operation of the lighting unit. Thus, as the claim language recites “a power facility for providing power to the light sources,” the power facility must do more than include a power supply; it must supply power in a suitable form for the light unit.

Although Defendants’ proposed construction purports to rely on the specification, it does so misleadingly, because it only includes the examples of “power facilities” listed in the specification and ignores the remaining claim language “for providing power to the light sources.” Indeed, Defendants’ proposed construction would render the claim language “a power facility for providing power to the light sources” superfluous. Yet, in case after case, the Federal Circuit has rejected claim constructions that would read out limitations from claim language. *See, e.g., Gen. Am. Transp. Corp. v. Cryo-Trans, Inc.*, 93 F.3d 766, 770 (Fed. Cir. 1996) (rejecting district court’s claim construction because it rendered the claim requirement “superfluous”); *Texas Instruments, Inc. v. US Int’l Trade Comm’n*, 988 F.2d 1165, 1171 (Fed. Cir. 1993) (rejecting a proposed construction because it would “render the disputed claim language mere surplusage”).

Signify’s proposed construction gives meaning to the *entire* claim phrase “a power facility for providing power to the light sources” which should be construed as “circuitry to provide power to the light sources in a form suitable for operation of the light sources.”

D. “channel extending longitudinally within the housing and spaced apart from the first cavity” (claims 1 and 10)

Signify’s Proposed Construction	Defendants’ Proposed Construction
No construction needed; however, to the extent that the Court deems a construction is required: “internal space that extends lengthwise in the housing and is separate from the first cavity”	Plain and ordinary meaning, namely, “passageway that extends lengthwise inside of the housing and is separate from the first cavity.”

The only difference between the parties' constructions for the phrase "channel extending longitudinally within the housing and spaced apart from the first cavity" in claims 1 and 10 is that Signify proposes the word "internal space" for "channel" while Defendants propose the word "passageway" for channel.

Signify's proposed construction is consistent with the use in the specification for the '941 Patent which states that a "channel" provides an "internal space": "The housing 800 may have a channel 5650 that provides an internal space, such as containing air, between the board 204 that supports the light sources 300 and the power facility 1800." Ex. 4, '941 Patent, 64:38-42.

In cases where the meaning of a disputed claim term in the context of the patent's claims remains uncertain, the specification is the "single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315. "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Id.* at 1316.

To the extent a construction is necessary, the phrase "channel extending longitudinally within the housing and spaced apart from the first cavity" in claims 1 and 10 should be construed to mean "internal space that extends lengthwise in the housing and is separate from the first cavity," which most naturally aligns with the patent's description of the invention.

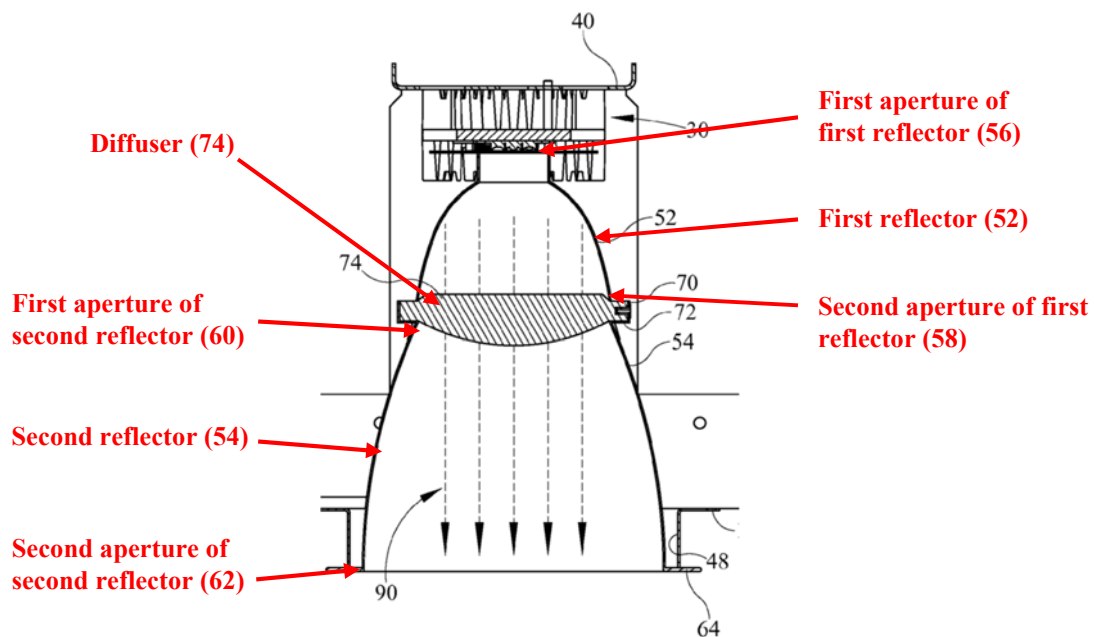
VII. THE '328 PATENT—THE "DOWNLIGHT REFLECTOR PATENT"

A. Technical Overview

The '328 Patent is directed to an LED downlight, commonly found in a residence or business. Ex. 5, '328 Patent, Abstract, 1:20-23. Before the '328 Patent, downlights generally consisted of a parabolic reflector with an incandescent bulb positioned at its geometric focus to direct the light downwards into the room. As LED lighting became a feasible alternative to

incandescent lighting, there became a need to develop an LED-based downlight, particularly since the long lifetimes of LED light sources make them well suited for difficult-to-reach installations such as in ceiling applications. Recognizing the different requirements of LED lighting, in which an array of small LEDs provides the light source, the inventors devised a unique geometry for a downlight. *See id.* at Fig. 6. In the figure below, the multi-piece reflector assembly includes two reflectors 52, 54. *See id.* at Fig. 6, 5:6-7. This is unlike a traditional incandescent or halogen downlight assembly, which might have only one reflector.

Each reflector in the '328 Patent is generally conical, having first and second apertures, or openings. *Id.* at 5:6-13, 5:23-36. In the claimed geometry, the LED array is positioned adjacent to the first aperture of the first reflector. *Id.* at 5:6-13, Figs. 3, 4, 6. The first reflector's second aperture is larger than its first aperture, creating a cone-like arrangement. *Id.* at 5:6-13. The second reflector 54 then mates with the first reflector 52 and a light diffuser 74 covers the light path between the two reflectors, i.e., the second aperture of the first reflector and the first aperture of the second reflector. *Id.* at 5:6-13, 5:23-65, 6:51-53, Fig. 6 (shown in part and annotated below).



This novel downlight geometry comprising a multi-reflector assembly and a diffuser provides smoother light output, optimal cut-off, reduced glare, and increased light efficiency compared to the traditional single-reflector downlight. *See id.* at 1:49-54, 3:67-4:3, 5:61-62, 7:1-8. The first reflector 52 guides and directs the light emitted by the LEDs forward towards the diffuser 74, optimizing the light output in the same direction. *See id.* at Fig. 6. The diffuser 74 is positioned in the reflector assembly for optimal cut-off and reduced glare. *Id.* at 3:67-4:3. The second reflector 54 again guides light exiting the diffuser in a synchronized direction, improving light distribution. *See id.* at Fig. 6. Light exiting a single-reflector downlight would not have the benefit of being treated through the diffuser and/or further collimated by the second reflector.

The terms Defendants have proposed for construction do not in fact need construction at all. They are straightforward terms that deserve their plain and ordinary meaning. *See Phillips*, 415 F.3d at 1312-13. In identifying that plain and ordinary meaning, Signify's proposed constructions have stayed true to that understanding. Defendants' proposed constructions, however, depart from the plain English meaning. Indeed, Defendants' constructions appear to be a bare attempt to manufacture non-infringement or invalidity positions. These constructions should be rejected.

B. The Asserted Claims

Defendants stand accused of infringing independent claim 1 and dependent claims 2 and 9 of the '328 Patent. Claim 1 is set forth below (with language for construction in bold italics):

1. An LED downlight fixture, comprising:

an array of LEDs in thermal connectivity with a heatsink, said array of LEDs positioned adjacent a first aperture of a ***multi-piece reflector assembly***;

said multi-piece reflector assembly including:

a first reflector having said first aperture disposed in an upper portion of said first reflector and an opposed larger second aperture in a lower portion of said first reflector;

a second reflector having a first aperture positioned adjacent said second aperture of said first reflector and a second aperture opposite said first aperture of said second reflector and defining a light exit passageway;

a diffuser positioned proximal to and extending across said second aperture of said first reflector and said first aperture of said second reflector.

C. “multi-piece reflector assembly” (claim 1)

Signify’s Proposed Construction	Defendants’ Proposed Construction
No construction needed; however, to the extent that the Court deems a construction is required: “an assembled collection of two or more parts that reflect light”	Plain and ordinary meaning, namely, “at least two or more parts put together where each part redirects almost all of the light that strikes the part instead of absorbing it.”

Signify does not believe that the term “multi-piece reflector assembly” needs construction. It is a clear and straightforward term and simply means “an assembled collection of two or more structures that reflect light.”

There should be no dispute here because “multipiece,” “reflector,” and “assembly” are plain English words. *See Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1373 (Fed. Cir. 2004) (ordinary, simple English words whose meaning is clear and unquestionable and there is no indication that their use in the patent changes their meaning, mean exactly what they say). As explained by the Federal Circuit, “In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314 “In such circumstances, general purpose dictionaries may be helpful.” *Id.*

“Multipiece” means “having or composed of more than one distinct piece.” Ex. 11, THE MERRIAM-WEBSTER.COM DICTIONARY, <https://www.merriam-webster.com/dictionary/reflector> (retrieved February 18, 2020).

“Reflector” means “one that reflects.” Ex. 11, THE MERRIAM-WEBSTER.COM DICTIONARY, <https://www.merriam-webster.com/dictionary/reflector> (retrieved February 18, 2020).

“Assembly” means “a collection of parts so assembled.” Ex. 11, THE MERRIAM-WEBSTER.COM DICTIONARY, <https://www.merriam-webster.com/dictionary/reflector> (retrieved February 18, 2020).

Accordingly, to the extent that the term “multi-piece reflector assembly” needs construction, it should be construed to mean “an assembled collection of two or more parts that reflect light” in accordance with its plain and ordinary meaning.

Defendants’ proposed construction is indefinite on its face. There are no identifiable bounds to “almost all of the light.” Indeed, at what point does a structure stop reflecting “almost all of the light”? Defendants’ construction thus does more to confuse than clarify the meaning of the claim language.

Moreover, Defendants’ proposed construction is not consistent with the use of the word “reflector” in the specification of the ’328 Patent, which notes that reflectors can have a variety of finishes, including specular, semi-diffuse, or diffuse:

According to one embodiment, the first reflector 52 is formed of specular reflective aluminum capable of conducting heat and supporting a lamp. Alternatively, other materials may be utilized having diffuse or specular reflective characteristics. The second reflector 54 may be formed of the same or similar materials as the first reflector 52. The exemplary reflectors 52, 54 may have semi-diffuse reflective surfaces although alternative finishes are contemplated and within the spirit and scope of these teachings.

Ex. 5, ’328 Patent, 5:14-22.

To the extent a construction is necessary, Signify’s proposed construction of the term “multi-piece reflector assembly” as “an assembled collection of two or more parts that reflect light” should be adopted, which is consistent with its plain English meaning.

D. “diffuser” (claim 1)

Signify’s Proposed Construction	Defendants’ Proposed Construction
No construction needed; however, to the extent that the Court deems a construction is required: “a structure that transmits light in a smooth manner”	Plain and ordinary meaning, namely, “a device that evenly distributes the light emitted from a source.”

As with the term “multi-piece reflector assembly,” Signify does not believe that the term “diffuser” needs construction. To the extent that the Court deems a construction is required, the term should be construed to mean “a structure that transmits light in a smooth manner.”

Signify’s proposed construction is consistent with the use of the term “diffuser” in the specification, which states: “The diffuser 74 allows a very smooth light output, allowing a user to look directly upwardly into the downlight 10 without causing great pain to the user’s eyes. This elimination of bright spots allows controlling of the maximum brightness or luminance.” Ex. 5, ’328 Patent, 7:1-5. Defendants’ proposed construction ignores the use of the term “diffuser” in the specification as noted above and instead proposes a definition that includes the requirement of a device that “evenly distributes the light emitted from a source.”

As noted by the Federal Circuit, in cases where the meaning of a disputed claim term in the context of the patent’s claims remains uncertain, the specification is the “single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1315. “The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Id.* at 1316.

To the extent a construction is necessary, Signify’s proposed construction of “diffuser” as “a structure that transmits light in a smooth manner” should be adopted as it most naturally aligns with the patent’s description of the invention.

VIII. AGREED CONSTRUCTIONS

The parties agreed to the constructions of the following terms in the '138 and '328 Patents:

Term/Phrase	Patent/Claim(s)	Joint Proposed Construction
“controller”	'138 Patent, claim 1	“a circuit or component that controls”
“(A.C.) dimmer circuit”	'138 Patent, claims 2 and 9	“dimmer that adjusts the power delivered by receiving an alternating current (A.C.) voltage input and providing an adjusted A.C. signal output”
“aperture”	'328 Patent, claim 1	“an opening or hole”

The parties respectfully request that the above constructions be adopted by the Court.

IX. CONCLUSION

Signify’s claim constructions make plain English sense and give the claims their full and ordinary meanings consistent with their usage in the specifications of the Patents-in-Suit.

Defendants propose constructions of the disputed claim language that would require this Court to re-write the asserted claims, because the only way Defendants can avoid an infringement finding is to obtain a construction that distorts the ordinary and plain language of the claims. Yet, claim construction in patent cases “is simply a way of elaborating the normally terse claim language in order to understand and explain, *but not to change*, the scope of the claims.” *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1339 (Fed. Cir. 2001) (emphasis added).

For all the reasons set forth above, Signify respectfully requests that this Court adopt its proposed claim construction for each of the terms and phrases in dispute.

Dated: February 21, 2020

Respectfully submitted,

SIGNIFY NORTH AMERICA CORPORATION
AND SIGNIFY HOLDING B.V

By their attorneys,

/s/ Jeremy P. Occek

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CERTIFICATE OF SERVICE

I certify that all counsel of record, who are deemed to have consented to electronic service are being served February 21, 2020, with a copy of this document via the Court's CM/ECF system.

/s/ Jeremy P. Occek

Jeremy P. Occek